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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/733,304

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EXAMINER

SHERMAN, STEPHEN G

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/733,304	<b>Applicant(s)</b> URAKAMI ET AL.	
	<b>Examiner</b> Stephen G. Sherman	<b>Art Unit</b> 2629	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 April 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-6 is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 15 March 2007 has been entered. Claims 1-6 are pending.

### ***Response to Arguments***

2. Applicant's arguments filed 15 March 2007 have been fully considered but they are not persuasive.

Applicant's argue that claim 1 as amended is no longer anticipated by Honda et al. Starting in the last paragraph of page 5, the applicant states:

Applicants respectfully submit that while Honda is similar in some general respects to embodiments of the disclosure of the instant application, Applicants note that there are significant differences between the disclosure of Honda and the disclosure and claims of the instant application. For example, in embodiments of the disclosure of the instant application, each single field is divided into a plurality of continuous subfields. Each of these subfields has a single light-emission period. Applicants respectfully submit that during the light-emission period, light emission takes place continuously as illustrated in Figs. 3 and 4 of the instant application. On the other hand, Applicants respectfully submit that that Honda's disclosure teaches that there are no light emission periods NE in some Subfields, as indicated in Figs. 24A to 24D of Honda.

Art Unit: 2629

Accordingly, Applicants have amended independent claim 1 to describe a combination of features of a display device including a display panel in which each field of an image signal is divided into a plurality of continuous subfields, each said subfield includes an emission period during which light emission induced by sustain discharge takes place continuously."...

...Accordingly, Applicants respectfully assert that the rejections under 35 U.S.C. § 102(b) should be withdrawn because Honda does not teach or suggest each feature of independent claim 1, as amended.

The examiner respectfully disagrees.

The examiner agrees that one difference between the applicant's invention and the invention of Honda et al. is that in Figure 24 of Honda et al., during the sustain period  $I_c$  of some subfields, such as SF5, light emission does not take place continuously, and instead there is a first period  $I_5$  and a second period  $I_6$  that have a period NE, where no light emission takes place, in between them. In the invention by the applicant's, however, each subfield has only a single light emission period, and thus during this period light emission is continuous. While the examiner agrees that this is the difference between the inventions of the applicant and Honda et al., the examiner disagrees that the claim as amended defines this difference. The claim, as amended, only states: "...plurality of continuous subfields, each said subfield includes an emission period during which light emission induced by sustain discharge takes place continuously..." Honda et al., while disclosing the non light emitting period NE being in between two light emitting periods during some of the subfields, does disclose that each subfield has "an emission period during which light emission induced by sustain discharge takes place continuously" as shown by either period  $I_5$  or  $I_6$ , which are both emission periods in which light emission takes place continuously in SF5, as explained in the rejection found below. The claim does not state that each subfield only has one

emission period during which light emission takes place continuously, and therefore Honda et al. still anticipate the claim language.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Honda et al. (US 2002/0030672).

***Regarding claims 1***, Honda et al. disclose a display device including a display panel (Figure 1), wherein each field of an image signal is divided into a plurality of continuous subfields, each said subfield include an emission period during which light emission induced by sustain discharge takes place continuously (Figure 24 (a) shows that there are subfields SF1 through SF10 that are continuous. Figure 24 (a) also shows that each subfield has at least one emission period, i.e. an emission period, during which light emission takes place continuously. For example SF1 has an emission period I<sub>1</sub> in which light emission takes place continuously, while SF5 has an emission period I<sub>5</sub> in which light emission takes place continuously.), the display panel includes a plurality of pixel cells for each pixel, and gray scale display is performed by

based on the selectively causing emission in the pixel cells image signal for each of the subfields (Paragraph [0031]-[0032] explain that pixel cells are provided. Figure 3 and paragraph [0036] explain about all of the possible luminance values and paragraph [0048] explains how the luminance values are associated with subfields.), the display device comprising:

a brightness frequency data circuit for generating frequency data indicating a number of pixels at each of the same brightnesses in a brightness distribution for each field of the image signal (Figures 1 and 2 and paragraphs [0036]-[0040] and [0042]-[0045] explain that according to pixel data, the 1H line luminance distribution analyzing circuit 3 creates accumulated frequency data and a luminance distribution.); and,

a controller for adjusting, for each of at least two brightness regions, the number of subfields for emission at each brightness within each brightness region, based on the frequency data of the pixels concerned (Figure 4 and paragraphs [0047]-[0048] explain that the drive control circuit 2 sets a driving sequence based on the accumulated frequency data, and that the number of subfields used depends on the patterns shown in Figure 4, where 10 subfields are used if full luminance is needed as shown in the region of pattern A, and 5 subfields are used for patterns B, C and D where the brightness regions are between 0 and 128, 64 and 192, and 128 and 255 respectively.).

**Regarding claim 2**, Honda et al. disclose the display device according to Claim 1, wherein the controller increases the number of the subfields used for the brightness region when a number indicated by the brightness frequency data is larger than a

predetermined value (Figure 4 shows that when the frequency data indicates that the brightnesses needed exceed the thresholds of the limitations set by patterns B, C and D, that pattern A is used, which requires more subfields than the other patterns as explained by paragraph [0048].).

**Regarding claim 3**, Honda et al. disclose the display device according to Claim 1, wherein the greater a number of the subfields used for the brightness region, the more the controller shortens a period of emission of the pixel cells performed in each subfield (Figure 24 shows that when only 5 subfields are used as shown in (b) the period for emission is longer for SF5 than in the period for emission for SF5 as shown in (a) where there are 10 subfields.).

***Allowable Subject Matter***

5. Claims 4-6 are allowed.
6. The following is an examiner's statement of reasons for allowance:

The primary reason for allowance is the recitation of the "brightness frequency data circuit," "logarithmic conversion circuit," "clipping circuit," "cumulative brightness frequency data circuit," and the "delimiter value generation circuit" all working in

conjunction with each other to produce the values which allow for the driving of the pixels, the structure not found singularly or in combination in the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen G. Sherman whose telephone number is (571) 272-2941. The examiner can normally be reached on M-F, 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 2629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SS

18 May 2007

AMR A. AWAD  
SUPERVISORY PATENT EXAMINER  
